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Group Art Unit: 2832

REMARKS

*Election/Restriction*

Applicants confirm the election of group I, embodiment 2 [figure 6], claims 1, 3-6 and 8-10 in Paper No. 3 and respectfully request allowance of claims 2 and 7 of group I, embodiment 1 [FIG. 5] upon allowance of a generic claim.

*Claim Rejections - 35 USC §112*

Claims 1, 3-6, and 8-10 are rejected under 35 USC §112, second paragraph, as being vague and indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 6, clarification was requested for "the spiral inductor including; and forming..."

Applicants have amended claims 1 and 6, as exemplified in claim 1, to read:

"forming the spiral inductor including:

forming a plurality of vias in the cross-section of the spiral inductor,  
the plurality of vias commonly connected at top or bottom and  
unconnected respectively at bottom or top, to define parallel  
spiral vias connected together at center proximate and center  
distal ends of the spiral inductor with the plurality of parallel  
spiral vias commonly connected at top or bottom and  
unconnected respectively at bottom or top."

The support for the amendment is in Specification page 5, lines 12-13 (relating to the cross-section) and lines 22-25 (showing the vias).

Clarification of the structure/arrangement of the "spiral vias" was requested.

It is respectfully submitted that the above amendment clarifies the structure/arrangement of the vias, which are in the Applicants' cross-section. Since FIG. 3 shows the vias in parallel and the inductor is a spiral, it is believed that this defines the "parallel spiral vias" taken as a whole.

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Regarding claims 3-5 and 8-10, these dependent claims respectively depend from claims 1 and 6, are believed to be allowable since they contain all the limitations set forth in the independent claim from which they depend and claim additional unobvious combinations thereof.

Based on the above, it is respectfully submitted that claims 1, 3-6, and 8-10 are allowable under 35 USC §112, second paragraph, as no longer being vague and indefinite.

***Claim Rejections - 35 USC §102***

Claims 1, 3-6, and 8-10 are rejected under 35 USC §102(e) as being anticipated by Park et al. (USPN 6,395,637, hereinafter "Park").

Park relates to a method for fabricating a spiral inductor, comprising the steps of: forming a first dielectric layer on a silicon substrate and forming a first metal wire on the first dielectric layer, wherein the first metal wire is in contact with an active element formed on the silicon substrate; and alternatively forming dielectric layers and metal layers, wherein the metal layers are electrically connected with an upper metal wire and a lower metal wire and wherein the metal layers are patterned using the dielectric layers as etching mask, whereby a metal corrosion is prevented by using the spiral dielectric pattern as the etching mask. [Park Abstract]

Regarding claims 1, 3-6, and 8-10, the independent claims have now been clarified to amend the previously claimed combination, as exemplified in claim 1, to now include the limitation to read:

"forming the spiral inductor including:

forming a plurality of vias in the cross-section of the spiral inductor,  
the plurality of vias commonly connected at top or bottom and  
unconnected respectively at bottom or top, to define parallel  
spiral vias connected together at center proximate and center  
distal ends of the spiral inductor with the plurality of parallel  
spiral vias commonly connected at top or bottom and  
unconnected respectively at bottom or top." [underlining for  
clarity]

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The support for the amendment is in Specification page 5, lines 12-13 (relating to the cross-section) and lines 22-25 (showing the vias).

Park discloses a single layer inductor in Parker FIGs. 2F and 3A without vias and multi-layer inductors in Parker FIGs. 4E, 5A, 8, 9, and 10 with vias that are commonly connected at both top and bottom. Further as indicated in the same figures, the cross-section of the Parker inductors is rectangular and the Parker inductors are connected by the vias.

In the present invention, as explained in Specification page 6, lines 6-9:

"For purposes of comparison with the prior art spiral inductor 22, when the width is 6.0  $\mu\text{m}$  and the thickness is 2.0  $\mu\text{m}$  as in the prior art, a four 1.5  $\mu\text{m}$  wide vias via/line spiral inductor 122 or 122' will have approximately a surprising increase in surface area of over 70%. A 70% increase in surface area will equate to approximately a 70% increase in Q."

Based on the above, it is respectfully submitted that claims 1, 3-6, and 8-10 are now allowable under 35 USC §102(e) as not being anticipated by Park et al. (USPN 6,395,637, hereinafter "Park").

#### *Other*

Applicants respectfully submit that claims 1 and 6 are generic and request allowance of claims 2 and 7 of group 1, embodiment 1 [FIG. 5] upon allowance of amended claims 1 and 6.

#### *Conclusion*

In view of the above, it is submitted that the claims are in condition for allowance and reconsideration of the rejections is respectfully requested. Allowance of claims 1-10 at an early date is solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including any extension of time fees, to Deposit Account No. 50-0374 and please credit any excess fees to such deposit account.

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Respectfully submitted,



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